



Outstanding Requests for Information

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US Army Corps
of Engineers

Outstanding Requests for Information
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Eastern Environmental Project Office

RFI No.	Date Requested	Date Answered	Requester's Name	Mod Required ?	RFI Subject - Information Requested
	Date Received		Answer Prepared by	Change No.	Government Response
RFI-0018	05/25/2017		Bob Starr	N/A N/A	<p>INFORMATION REQUESTED: GWCS wells and Idaho Well Construction Regulations - This is a request for direction on how resolve issues with SOW requirements for extraction wells, control system wells, and remedy performance evaluation wells that may not comply with "Well Construction Standards Rules" (IDAPA 37.03.09). The discussion here for control wells also applies to the remedy performance wells that will be constructed in the Upper Aquifer. Rule 25.02 describes the waiver process that could be used to request that the Department of Water Resources (DWR) waive specific requirements and approve the alternative design.</p> <p>The extraction wells need to have screens that are as long as feasible to minimize drawdown in order to reduce adverse effects associated with pumping aerated groundwater and to maintain sufficient pump submergence depth to prevent cavitation. SOW Section 4.4.2.2 states that extraction well screens can extend from one foot below the base flow water table to two feet above the aquitard, and Section 4.4.2.3 requires that the control wells be screened at the same interval as the adjacent extraction wells. The water table is approximately 5-12 feet below ground surface (bgs), and the aquitard is approximately 17-27 feet bgs at the well locations. Thus, the preliminary design for these wells has well screens with tops 6-13 feet bgs and bottoms 15-25 feet bgs.</p> <p>The applicable state rule for these wells is in Rule 25 – Construction of Cold Water Wells. This rule specifies, among other things, minimum separation distances between wells and other features, requirements for a protective above-ground casing that provides protection from sunlight if plastic casing is used, and for minimum casing and annular seal depths. In order to construct wells that will function in a way that will meet project objectives, some of the state requirements cannot be met.</p> <p>Separation Distance: Rule 25.01.d identifies minimum separation distances between wells and sewer lines, among other things. A minimum separation distance of 50 feet is required for gravity flow sewers, and 100 feet for pressurized sewers. Some of the extraction and control system well locations shown on proof of concept drawings are less than 50 feet from the sewer line. It is not feasible to relocate wells to be more than 50 feet from the sewer line.</p> <p>Protective Casing, Casing, and Seal Depth: Rule 25.04.b addresses thermoplastic casing, and includes "Thermoplastic casing extending above-ground must be protected from physical and ultraviolet light damage by enclosing it within steel casing extending at least twelve (12) inches above land surface and finished grade and to a minimum depth of eighteen (18) feet below land surface or five (5) feet below land surface for monitoring wells".</p> <p>A strict interpretation is that a steel protective casing that extends from one foot above ground to 18 feet bgs is required, although it is unlikely that this is the intention of the rule. Typical practice is to protect plastic casings with an above ground steel protective casing that extends only 2-3 feet below ground and is set in a cement-based grout in the upper part of the annulus between the plastic casing and the borehole wall. Our interpretation is that the intention of the rule is to install a steel protective casing above ground, and to have the plastic casing extend to 18 feet bgs or, for a monitoring well, to 5 feet bgs.</p> <p>Sealing Wells in Unconsolidated, Unconfined Aquifer: Rule 25.08.b pertains to sealing of wells in an unconsolidated formation without an overlying clay confining layer, which is the situation for the extraction and control system wells, and most of the remedy performance evaluation wells. It includes "If the well depth is less than thirty-eight (38) feet well casing must extend to at least five (5) feet below the water table or eighteen (18) feet, whichever is greater, and be sealed to a depth of at least eighteen (18) feet."</p> <p>For the GWCS wells, this would require sealing the well (i.e., filling the annulus between the well casing and the borehole wall with low permeability grout) to a depth of 18 feet bgs. As noted above, the extraction wells and control system wells are fairly shallow, likely only 15-25 feet depth. If the wells were cased and sealed to a depth of 18 feet bgs, they would not function as needed for this project.</p> <p>As mentioned above in the discussion of Rule 25.04.b, casing for monitoring wells is required to extend only to a depth of five feet bgs; however, the rule does not address a shallower required seal depth for monitoring wells. The intention is likely to allow monitoring wells to be constructed with both casing and annular seal to a depth of five feet bgs and a screened interval at greater depth.</p>
RFI-0019	05/26/2017		Peter Yuan	N/A N/A	<p>INFORMATION REQUESTED: Maintenance Building Foundation - If available, please provide engineering drawings, including foundation drawings, and the geotechnical investigation / foundation recommendation report for the Existing Maintenance Building.</p>

Range: All Status: All

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